

TESTIMONY OF W. R. STIMART

FOR

DUKE POWER COMPANY

PSCSC DOCKET NO. 94-006-E

1 Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION WITH DUKE
2 POWER COMPANY.

3 A. My name is William R. Stimart and my business address is 422 South Church
4 Street, Charlotte, North Carolina. I am Vice President, Rates and Regulatory
5 Affairs of Duke Power Company.

6 Q. STATE BRIEFLY YOUR EDUCATION, ACCOUNTING BACKGROUND AND
7 PROFESSIONAL AFFILIATIONS.

8 A. I am a graduate of the University of Illinois, holding a degree of Bachelor of
9 Science in Accounting. I am a Certified Public Accountant, with membership
10 in the American Institute of CPAs and the North Carolina Association of
11 CPAs. I am also a member of the Southern Carolinas Chapter of the
12 Financial Executives Institute (FEI) and a member of the FEI Committee on
13 Corporate Reporting. I am a member of the Accounting Research Committee
14 of the Edison Electric Institute.

15 Q. PLEASE DESCRIBE YOUR BUSINESS BACKGROUND AND EXPERIENCE.

16 A. Upon graduation from college in 1953, I joined Arthur Andersen & Co., an
17 international firm of Certified Public Accountants. During the following eleven
18 years I worked almost exclusively with public utilities in the areas of audit,
19 accounting, finance and regulatory matters. From 1964 to the spring of 1971,
20 I was associated with Ayrshire Collieries Corporation in varying positions, the
21 last of which was Controller. I joined Duke Power in May 1971 as Assistant

1 Treasurer, was elected Treasurer in April 1972, Controller in October 1976
2 and Vice President, Regulatory Affairs in October 1979. I became Vice
3 President, Rates and Regulatory Affairs in August 1990.

4 Q. ARE YOU FAMILIAR WITH THE ACCOUNTING PROCEDURES AND
5 BOOKS OF ACCOUNT OF DUKE POWER COMPANY?

6 A. Yes, as ordered by this Commission, the books of account of Duke Power
7 Company follow the uniform classification of accounts prescribed by the
8 Federal Energy Regulatory Commission.

9 Q. MR. STIMART, HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS
10 COMMISSION?

11 A. Yes. I have testified on financial and accounting matters in all of the
12 Company's general rate cases since 1973. I have also testified in connection
13 with numerous applications by the Company to adjust its electric rates and
14 charges based solely on changes in the cost of fuel.

15 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

16 A. The purpose of my testimony is as follows:

- 17 1. To summarize the Company's procedures in accounting for fuel.
- 18 2. To update the actual fuel cost data reviewed in these proceedings.
19 Actual fuel costs through March 1994 were presented in the last
20 hearing. April 1994 through September 1994 actual fuel costs are
21 available and included in the exhibits accompanying my testimony.
- 22 3. To summarize the performance of the Company's nuclear generating
23 system during the period April 1994 through September 1994.
- 24 4. To discuss the fuel recovery results for the period June 1994
25 through November 1994.

1 5. To provide and explain the Company's computations for the projected
2 fuel costs for the six-month period December 1994 through May 1995.

3 Q. WOULD YOU EXPLAIN THE RELATIONSHIPS BETWEEN THE TIME
4 PERIODS INDICATED IN YOUR LAST ANSWER?

5 A. The purpose of this hearing is to set the fuel factor for bills rendered during
6 the six-month period December 1994 through May 1995 and review actual
7 fuel costs incurred in the current six-month period. The fuel factor for the
8 period June 1994 through November 1994 was established in May 1994.
9 Actual fuel cost information is now available for each month in the current
10 period except October and November 1994. Also April and May 1994 fuel
11 cost information, which was estimated for the last fuel hearing, is now
12 presented on an actual basis.

13 Q. MR. STIMART, CAN YOU EXPLAIN HOW THE MONTHLY COAL COSTS
14 CHARGED TO EXPENSE ARE DERIVED?

15 A. All the Company's coal is delivered by rail. As that coal is received by each
16 plant, it is weighed and sampled for quality verification. Subsequently, the
17 purchasing department compares the weight, price and quality with the
18 purchase order and railroad waybill. Adjustments are made to the cost of
19 coal purchased in those cases where the quality of coal received varies from
20 contract specifications for BTU and ash content.

21 Moisture and BTU tests are also made as the coal is delivered to the
22 coal bunkers for each boiler. To the extent that the moisture content of coal
23 burned differs from the moisture content of coal purchased, an adjustment is
24 subsequently made to the inventory tonnage. Wet coal weighs heavy and
25 without the moisture adjustment, tons burned would be overstated and
26 inventory would be understated.

1 Coal costs charged to expense are calculated on an individual plant
2 basis. The expense charge is the product of the tons of coal conveyed to the
3 bunkers for a generating unit during the month times the average cost of the
4 coal. The number of tons is determined by using scales located on the
5 conveyor belt running to the unit's coal bunkers. The average cost is the
6 total cost of coal on hand as of the beginning of the month, computed using
7 the moving average inventory methodology, plus the cost of coal delivered to
8 the plant during the month. The cost of coal is determined from the invoice
9 for the coal and the freight bill and does not include any nonfuel cost or coal
10 handling cost at the generating plant.

11 Physical inventories using aerial surveys are conducted twice a year.
12 An adjustment to book inventory was made in January 1994 to reflect the
13 results of the physical inventories taken in December 1993. This adjustment
14 increased the January 1994 coal ending inventory by 112,000 tons. The
15 most recent prior adjustment to book inventory occurred July 1988.

16 Q. PLEASE DISCUSS THE PERFORMANCE OF DUKE POWER COMPANY'S
17 FOSSIL GENERATING SYSTEM.

18 A. In 1993 the fossil steam generating plants provided 41% of the Company's
19 total generation. The heat rate for the fossil system was 9417 BTU/KWH, a
20 slight improvement from the previous year. The Duke fossil generating
21 system had the best heat rate for conventional fossil-fueled boilers. For 21 of
22 the last 24 years, it has ranked number 1 in efficiency. If Duke's system had
23 operated at the average 1993 heat rate of the top 10 systems, fuel costs in
24 1993 would have been approximately 17 million dollars higher.

1 Q. PLEASE EXPLAIN HOW MONTHLY NUCLEAR COSTS CHARGED TO
2 EXPENSES ARE DERIVED.

3 A. Nuclear fuel expense for the month is based on the energy output in Mbtu's
4 of each fuel assembly in the core.

5 The cost of each fuel assembly is determined when the fuel is loaded
6 in the reactor. The costs include yellowcake (uranium), conversion,
7 enrichment, and fabrication. An estimate of the energy content of each fuel
8 assembly is also made. A cost per Mbtu is determined by dividing the cost of
9 the assembly by its expected energy output. Each month, an engineering
10 calculation of the Mbtu output of an assembly is priced at its cost per Mbtu.

11 During the life of a fuel assembly, the expected energy output may
12 change as a result of actual plant operations. When this occurs, changes
13 are made in the cost per Mbtu for the remaining energy output of the
14 assembly. New fuel assembly orders are planned for either a sixteen or
15 eighteen month cycle. The length of a cycle is the duration of time between
16 when a unit starts up after a refueling and when it starts up after its next
17 refueling. During a refueling approximately one-third of the fuel in the
18 reactor is replaced.

19 In addition, nuclear fuel disposal costs are calculated at 1 mill per
20 KWH of electricity generated and sold for each of our nuclear stations. This
21 amount is paid to the Department of Energy on a quarterly basis.

22 Q. I REFER YOU TO STIMART EXHIBITS 1 THROUGH 6 AND ASK
23 WHETHER EACH OF THESE EXHIBITS WAS PREPARED BY YOU OR AT
24 YOUR DIRECTION AND UNDER YOUR SUPERVISION?

25 A. Yes, each of these exhibits was either prepared by me or at my direction and
26 under my supervision.

1 Q. MR. STIMART, WHAT IS THE MAGNITUDE OF THE COMPANY'S
2 MONTHLY FUEL COSTS?

3 A. Stimart Exhibit 1 sets forth the total system monthly actual fuel costs (as
4 burned) that the Company has experienced from April 1994 through
5 September 1994. It also shows the dollar amounts associated with each type
6 of generation and total MWH generated. The oil and gas usage was for light
7 off fuel used to start up our coal plants and for combustion turbine
8 generation. The fluctuation in total fuel costs in this period is primarily the
9 result of the refueling and inspection outages of the nuclear units, weather
10 sensitive sales and the availability of hydro generation. Actual KWH sales
11 for the period April 1994 through September 1994 were 1.8 % above
12 forecast. During this same period, hydro generation was 17 % above the
13 median. The median hydro generation is computed for each calendar month
14 by selecting the value of generation for that calendar month that is greater
15 than the generation values for that calendar month during 15 years of a 31
16 year (1963-1993) period and less than the generation values for that
17 calendar month during 15 years for that same period. The sum of the each
18 calendar months median hydro generation is then used as an annual
19 generation value for median hydro.

20 Q. MR. STIMART, WHAT IS THE MAGNITUDE OF THE COMPANY'S FUEL
21 COST AS RELATED TO THE TOTAL COST OF SERVICE?

22 A. Fuel costs continue to represent the largest cost item incurred in providing
23 electric service. For the twelve months ended September 30, 1994, fuel and
24 purchased power fuel costs of \$779 million represented 18% of the
25 Company's total revenue. Coal costs are the largest component, equaling
26 66% of the Company's fuel bill.

1 Q. MR. STIMART, WHAT HAS HAPPENED TO THE UNIT COST OF FUEL
2 DURING RECENT REPORTING PERIODS?

3 A. Stimart Exhibits 2a and 2b graphically portray the "as burned" cost of both
4 coal and nuclear fuel in cents per million BTU (MBTU) for the twelve month
5 ended periods of July 1992 through September 1994. As the graph (Exhibit
6 2a) shows, coal costs have been generally flat during this period. The trend
7 of coal prices reflects price reductions resulting from contract renegotiations,
8 as well as the timing of purchases in the spot market. Nuclear fuel costs
9 have been generally flat during recent periods (Exhibit 2b). This is primarily
10 due to the continuation of lower uranium costs and lower enrichment costs.

11 While the unit prices of each type of fuel have shown little volatility in
12 the recent past, we can expect our composite cost of fuel to increase. Our
13 future KWH growth will be primarily met from the Company's coal generating
14 units and the cost of coal is about three times the cost of nuclear fuel.

15 Q. MR. STIMART, WHAT DOES YOUR EXHIBIT 3 SHOW?

16 A. Stimart Exhibit 3 graphically shows generation by source for the current and
17 projected test periods as well as three prior periods. The variations in total
18 generation reflect seasonal fluctuations. The level of nuclear generation
19 reflects the maintenance and refueling outages during the periods.

20 Q. MR. STIMART, WOULD YOU PLEASE DISCUSS THE PERFORMANCE OF
21 THE COMPANY'S NUCLEAR GENERATING SYSTEM DURING THE LAST
22 SIX MONTHS?

23 A. Yes. Our nuclear units continue to run very well. Duke has seven nuclear
24 units in its system capability. With the refueling requirements, maintenance
25 requirements, NRC operating requirements, and the complexity of operating
26 nuclear generating units our system will nearly always have the equivalent of

1 at least one nuclear unit out of service. Stimart Exhibit 4 shows the monthly
2 capacity factors of the Company's nuclear generating facilities both for the
3 past six months and estimated for October 1994 through May 1995. An
4 explanation of actual and forecasted outages of a week or more during this
5 time period is also provided on that exhibit. Oconee Unit 1, Catawba Unit 2
6 and McGuire Unit 1 were down for refueling and maintenance during the past
7 six months. McGuire Unit 2 and Catawba Unit 1 are scheduled for refueling
8 outages during some portion of the next six month period. Other outages
9 included an outage at Oconee Unit 2 due to a tube leak in the "A" steam
10 generator and an outage at Oconee 3 due to tube leaks in both letdown
11 coolers. The two letdown coolers in each unit draw water from the primary
12 coolant system for demineralization and purification prior to being returned to
13 the primary coolant system. There were also some other outages of short
14 duration during the period that are indicative of the complexity of a nuclear
15 plant.

16 Q. MR. STIMART, DO YOU BELIEVE THE COMPANY'S ACTUAL FUEL
17 COSTS INCURRED FOR THE PERIOD APRIL 1994 THROUGH
18 SEPTEMBER 1994 TO BE REASONABLE?

19 A. Yes, I believe the costs are reasonable, meet the guideline test set forth in
20 Subsection (E) of Section 58-27-865 of the South Carolina statutes and
21 reflect the Company's efforts in maintaining reliability of service and an
22 economical generation mix, thereby minimizing the total cost of providing
23 service to our South Carolina customers.

24 The performance of our nuclear units equals or exceeds that of
25 comparable facilities, as shown below:
26

1 Duke system actual capacity factors

2 April 1994 - September 1994 82 % 3 units refueled
 3 October 1993 - March 1994 82 % 2 units refueled
 4 12 months ended September 1994 82 %
 5 Calendar 1993 78 %

7 National average capacity factors

8 North America Electric Reliability Council (NERC) data for PWR's

9 Calendar years 1993 and 1992 73%
 10 5 year 1989 - 1993 71%

12 Q. WHAT FUEL FACTORS HAS THIS COMMISSION APPROVED IN THE
 13 PAST?

14 A. The following table shows the approved factors since 1979, when the current
 15 procedure began:

16	<u>Period</u>	<u>Periods</u>	<u>Cents per KWH</u>
17			
18	June 1979 - May 1980	2	1.3500¢
19	June 1980 - May 1981	2	1.2250¢
20	June 1981 - November 1981	1	1.5000¢
21	December 1981 - May 1982	1	1.5750¢
22	June 1982 - November 1982	1	1.6500¢
23	December 1982 - May 1983	1	1.6000¢
24	June 1983 - May 1984	2	1.3750¢
25	Eff. 3/84		1.0500¢
26	June 1984 - November 1984	1	1.1250¢
27	December 1984 - November 1985	2	1.2500¢
28	Eff. 10/8/85		1.1199¢
29	December 1985 - November 1986	2	1.1199¢
30	Eff. 11/5/86		0.9806¢
31	December 1986 - May 1987	1	0.9806¢
32	June 1987 - November 1987	1	1.1500¢
33	December 1987 - November 1988	2	1.2500¢

1	December 1988 - November 1989	2	1.0750¢
2	December 1989 - May 1990	1	1.0500¢
3	June 1990 - November 1990	1	1.0000¢
4	December 1990 - November 1991	2	1.1000¢
5	December 1991 - May 1992	1	1.0000¢
6	June 1992 - November 1993	3	0.9500¢
7	December 1993 - November 1994	2	1.0000¢
8			

9 Q. WHAT HAS BEEN THE COMPANY'S FUEL RECOVERY EXPERIENCE
10 DURING THE PERIOD APRIL 1994 TO SEPTEMBER 1994?

11 A. Stimart Exhibit 5 shows the actual fuel costs incurred for the period April
12 1994 through September 1994, the estimated fuel costs for October and
13 November 1994 and the over-recovery carried forward at the beginning of the
14 period. The fuel costs incurred are compared to the approved rates. The
15 Company started the period over-recovered by \$4,192,000 as shown on line
16 11. As shown on line 12, the Company is estimated to end the period with an
17 under-recovery balance of \$1,551,000 in a deferred account.

18 Q. MR. STIMART, WHAT IS THE COST OF FUEL THE COMPANY PROJECTS
19 FOR THE PERIOD DECEMBER 1994 THROUGH MAY 1995?

20 A. Stimart Exhibit 6 sets forth the projected cost of fuel for the next six-month
21 period, December 1994 through May 1995. As shown on line 7, the fuel cost
22 per KWH for the period is estimated to be 1.0390 ¢/KWH. After adjusting for
23 the cumulative variance of fuel cost recovery shown on Stimart Exhibit 5, the
24 adjusted fuel costs are 1.0544 ¢/KWH, excluding revenue related taxes.

25

26 Q. WHAT WAS THE BASIS YOU USED IN MAKING THIS PROJECTION?

27 A. The latest available information has been used in developing the projections
28 shown on Stimart Exhibit 6. For example, the projection of KWH sales is
29 based on the Company's latest KWH sales projection. Also, the latest

1 available data on fuel prices and nuclear outage schedules have been used.
2 The forecast for hydro generation reflects the median hydro. The forecasted
3 cost of nuclear fuel reflects the nuclear capacity factors presented in Stimart
4 Exhibit 4.

5

6 Q. MR. STIMART, WHAT IS THE FUEL FACTOR THE COMPANY PROPOSES
7 FOR INCLUSION IN BASE RATES EFFECTIVE DECEMBER 1, 1994?

8 A. The Company proposes that a fuel factor of 1.00 ¢/KWH be continued in
9 base rates, effective December 1, 1994. Based on our estimates, this fuel
10 factor would first refund the over-recovery balance at the beginning of the
11 period and the remainder would recover a portion of the fuel costs incurred
12 during the period, resulting in an under-recovery balance at the end of May
13 1995. This factor balances out over/under-recoveries of fuel costs over time
14 and is in keeping with the spirit of the statute to allow utilities to recover
15 prudently incurred fuel costs "in a manner that tends to ensure public
16 confidence and minimize abrupt changes in charges to consumers."

17

18 Q. MR. STIMART, DOES THAT CONCLUDE YOUR TESTIMONY?

19 A. Yes, it does.